

## (57) Abstract

The present invention relates to a sulfonated polymer membrane and to a process for the preparation thereof. According to the process, a polymer film is irradiated, and the irradiated polymer film is sulfonated in order to link sulfonic acid groups thereto. According to the invention, the sulfonation is continued until the total concentration of sulfonic acid groups in the membrane is 0.4 – 3.0 meq/g and they are homogeneously distributed in the membrane material in such a manner that their concentration in the middle of the membrane is at minimum 0.2 meq/g. With the help of the invention, it is possible by a rapid and simple process to prepare membranes the chemical and mechanical properties of which can be regulated by means of the selection of the initial film, by irradiation and by the sulfonation process.